Update Bulletin No. 463

Jim Dulley

Thank you for your interest in writing to me about portable air conditioners you can move from room to room. These can be effective with or without central air-conditioning. If you do not have central air, using a portable air conditioner can eliminate the need for installing several room air conditioners. If you do have central air-conditioning, using one will allow you to set the central thermostat higher.

A hot air vent duct is run from the back of the unit to a window or door to exhaust the heat and humidity outdoors. Most of the models include an adjustable adapter, or several adapters, that can easily be moved from window to window as you move the portable air conditioner. They can also be operated without a vent to briefly blow cool air on a specific spot and the hot, air just blows out the back. In this mode, the air is still being dehumidified for better comfort too.

Most portable air conditioners are about as efficient as a typical room air conditioner. An energy efficiency ratios (EER) greater than 10 is considered to be very high. There are no formal standards for these EER tests, as there is for window air conditioners, so the EER's can actually vary depending on many factors such as how straight and long you expand the window exhaust duct. All the models listed are adequately efficient to save you money on your utility bills. If you plan to cool a bedroom often, the small Northstar model is very lightweight (only 36 lb.) so it is easy to carry to a second floor room. I use a remote control Northstar model in my own bedroom (photo to the right). Some of the Danby, Soleus, Sunpentown, and Windchaser models use the newest two-hose designs (inlet and outlet air duct to window adapter) for higher efficiency and quiet operation. I also use a Soleus LX-140 model with a heat pump system for efficient heater during winter. It uses a two-hose design and a remote control with an easy-to-read color display. (See page 4 for details.)

All air conditioners condense water from the air as they dehumidify. If you do not want to remove and empty a water tray every several days, select an evaporative model (Delonghi, Fedders, Maytag, Soleus, and Sunpentown) that exhausts the water vapor outdoors with the heat from the room air. The model I use in my own home have a water cup which I empty once a day. It is not a problem or hassle.

Not all of the manufacturers have had there sound levels tested and certified, so they are not listed. Most of them are about as load as a typical window air conditioner. For the highest cooling output and most quiet operation, choose one of the split systems by Delonghi or Northstar. The compressor/condenser unit is placed outdoors and attached through a window to the indoor cooling unit by a long hose. These units dehumidify effectively and are best for a large room or group of open rooms. Several of the Koldwave models use water to cool the condenser coils so they require no outside air venting but do need a water line/drain.

If you are concerned about indoor air quality and allergies, and your house it not too hot, using a dehumidifier can help. It can make you feel more comfortable, especially if you use ceiling paddle fans, but they do not actually cool the air. Portable models may be effective for small rooms, such as a bedroom at night. The Santa Fe whole-house model is the most efficient design available (see page 4). It can be freestanding or attached to your air-conditioning duct system and fresh air vents.

The prices of portable air conditioners and heat pumps vary significantly. For example, a Supentown 7,500 Btuh model retails for about $429 online. A two-hose 9,000 Btuh model retails for $519. A Toyatomi 12,000 Btuh model retails for $550. A Delonghi 13,000 Btuh model retails for more than $2,000.

Jim

Electric Cost to Operate Portable A/C - *cents per Day

Power Rating	Local Electric Rate — cents per kilowatt-hour													
Watts	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0
300	16	18	20	22	23	25	27	29	31	32	34	36	38	40
400	21	24	27	29	31	33	36	39	41	43	45	48	51	53
500	27	30	33	36	39	42	45	48	51	54	57	60	63	66
600	32	36	40	44	47	50	54	58	62	65	68	72	76	80
700	38	42	46	50	55	59	63	67	71	76	80	84	88	92
800	43	48	54	58	62	67	72	77	82	86	91	96	103	112
900	49	54	59	65	70	76	81	86	92	97	103	108	113	119

** Based on 50% run time controlled by thermostat in unit.*

Savings with a 5-Degree Cooling Thermostat Set-up (one 11-hour period)

Albuquerque, NM	10%	Columbus, OH	12%	Los Angeles, CA	20%	Portland, ME	15%
Atlanta, GA	12%	Dallas, TX	9%	Louisville, KY	11%	Portland, OR	11%
Atlantic City, NJ	13%	Denver, CO	10%	Madison, WI	13%	Providence, RI	16%
Billings, MT	9%	Des Moines, IA	12%	Memphis, TN	11%	Roanoke, VA	12%
Birmingham, AL	12%	Detroit, MI	13%	Miami, FL	11%	Salt Lake City, UT	10%
Boise, ID	8%	Dodge City, KS	9%	Milwaukee, WI	13%	San Diego, CA	25%
Boston, MA	13%	Greensboro, NC	12%	Minneapolis, MN	12%	San Francisco, CA	14%
Buffalo, NY	14%	Houston, TX	9%	New Orleans, LA	11%	Seattle, WA	16%
Burlington, VT	14%	Indianapolis, IN	12%	New York, NY	13%	Sioux Falls, SD	11%
Charleston, SC	13%	Jackson, MS	11%	Oklahoma City, OK	11%	Spokane, WA	10%
Cheyenne, WY	12%	Jacksonville, FL	11%	Omaha, NE	12%	Springfield, MA	13%
Chicago, IL	13%	Kansas City, MO	10%	Philadelphia, PA	13%	St Louis, MO	11%
Cincinnati, OH	12%	Las Vegas, NV	7%	Phoenix, AZ	7%	Syracuse, NY	13%
Cleveland, OH	13%	Little Rock, AR	10%	Pittsburgh, PA	13%	Washington, DC	13%

Selected Manufacturers of Portable Air Conditioners

Company Address Telephone No.	Model No.	Maximum Cooling Capacity	Energy Efficiency Rating	Dehumidifying Output (pints/day)	Weight Indoor Unit	Dimensions (wxdxh, inches) Indoor Unit
DANBY PRODUCTS PO Box 669 Findlay, OH 45840 (866) 943-2629 (419) 425-8627 www.danby.com	DPAC5070	5,000 Btuh	9.2	40 pints	71 lbs	17.12x13.18x29
	DPAC6507	6,500 Btuh	8.2	49 pints	75 lbs	17.12x13.18x29
	DPAC80201	8,000 Btuh	9.5	57 pints	88 lbs	15.25x18x32.62
	DPAC90061	9,000 Btuh	8.3	68 pints	115 lbs	17.5x20x33
	DPAC10061	10,000 Btuh	8.3	70 pints	115 lbs	17.5x20x33
	DPAC120061	12,000 Btuh	8.3	70 pints	115 lbs	17.5x20x33
Features - The units come standard with a sliding venting kit that fits most vertical and horizontal windows. The flexible exhaust hose is for venting the hot air outside. Other features include a 23:50 timer, oscillating air swing that directs cool air from side-to-side to help cool the room more efficiently and an electronic control panel. They have an external bucket for extended operation overnight. The internal reservoir is removable with direct drain-off options. There is a one-year parts and labor warranty on models DPAC5070, DPAC6507, DPAC80201, and DPAC90061, any 1.5-year warranty on DPAC10061and a two-year warranty on modelDPAC120061. The last four models above are 3-in-1 units — portable air conditioner dehumidifier, fan and heater. They have a two speed heater — 830 and 1,380 watts. These last four models models use a two-hose system. Outdoor air is brought in through the second hose to cool the condenser coils instead of using the air from inside the room.						
DELONGHI 50 Commerce Dr. Trumbull, CT 06611 (800) 322-3848 www.delonghiusa.com	Pinguino PAC-L90	10,000 Btuh	8.4	50 pints	110 lbs	22.05x15.35x28.74
	Pinguino PAC-400	13,000 Btuh	8.9	89 pints	93 lbs	22x15x29
Features - These thermostatically controlled systems require no window installation or special wiring, only ordinary AC current and a regular outlet. Since there are dozens of venting options, there is no interference with existing HVAC systems or duct work. Simply set up the system for venting, press a switch, and these units quickly and quietly cool. All of these models use a "no-drip" design. This means the water does not condense inside the unit and there is no water condensation receptacle to empty. The water vapor blows outdoors with the warm exhaust air. Each unit has easy-rolling casters so it can be moved. The units also work as a fan, dehumidifier and air purifier for use year-round. They have an antibacterial filter that collects dust particles and prevents bacteria build-up. It operates on air alone and requires no water to cool. It has a second exhaust hose which can be attached to inscrease the efficiency by drawing the condenser cooling air from outdoors. The units have a 24-hour programmable timer with bypass operation and an adjustable thermostat provides variable cooling when you need it most. Two-speed fan control with protective dust cover makes operation simple. The PAC-400 consists of two components-the ultra-quiet cooling unit (placed indoors) and the low-noise, no drip condenser, connected by an 11-foot flexible hose that fits easily through a small crack in any door or window. The simple-to-use control panel incorporates an on-off switch with light, two-speed fan, 24-hour programmable timer with bypass function, indicator lights that monitor compressor functions, and a protective transparent dust cover. Anti-frost self-check, electronic compressor protection and other safety devices are built in. Plus an easily removable antibacterial and dust-trapping filter makes air purification easy. This unit will cool up to 400 square feet. The outdoor condensing unit weighs 31 pounds and the dimensions are — 22.5" w x 10" d x 11" h.						
FEDDERS 2 Center Drive Monroe Twp., NJ 08831 (609) 662-5300 www.fedders.com	A6P09S2C	9,000 Btuh	7.9	42 pints	79 lbs	13.7x20.6x35.2
	AEP09D2C			91 pints	86 lbs	19.2x15.5x33.5
Features - With an evaporative design, the hot, humid air exits out the the rear exhaust, to be vented out a window or door. It includes an adjustable window adapter and flexible vent hose. A charcoal filter reduces pollen dirt and dust and it also has a slide-out washhable air filter for easy cleaning. There are side hand-holds and four bottom casters to make the unit easy to move from room to room. The controls are located on the top for easy access. There is a 24-hour on/off timer so you can turn the unit off and on when needed. There are three cooling speeds, three fan speeds and a dehumidifier only mode. You can adjust the temperature within 1° of your desired temperature. There is an adjustable time and temperature display. It does not have a water tank that needs to be emptied. The digital display can readout the actual room temperature and the desired temperature setting. They operate quietly and have a high level of dehumidification. The model AEP09D2C has two exhaust hoses and has back-up electric resistance heating.						
KOLDWAVE, INC. 260 N. Elm St. Westfield, MA 01085 (413) 564-5520 www.koldwave.com	Koolette 2K07	7,000 Btuh	7.8	n/a	83 lbs	22.4x12x16.6
	Kompac 2K10DB	9,400 Btuh	9.4		132 lbs	25x10.2x31.5
	Airmaster 2AK10	13,000 Btuh	10.4		182 lbs	25x34x34.5
Features - The Koolette and Kompac units are ideal where you do not have access to a window or other outdoor opening. They use water from a faucet to provide the cooling source for the condenser coils. Special hose kits are available so you can attach it to a faucet up to 7, 20 or 40 feet away. A valve shuts off the water flow each time the thermostat shuts off the unit. The units have a two-speed fan and there are four-way adjustable air discharge grilles for even cooling. A heat pump model is also available for wintertime heating. Included is a condensate pump so there is no water tray to empty. It is equipped with a metallic air filter that can be removed for easy cleaning. The Airmaster unit uses air through two exhaust hoses. The Kompac and Airmaster units are equipped with casters so they can be moved from one room to the other. The Koolette unit is available with rubber feet so it can be placed on a table or desk without marring the surface or finish. There are larger models available. There is a hinged panel on the Airmaster unit that allows access to the removable condensate holding tank. The unit automatically shuts off when the tank is full and a red indicator light is illuminated on the front panel. An optional pump kit is also available for automatic condensate removal. If venting is required, you can extend the optional 10-foot flexible vent hose, with ceiling mount collar, to a discharge area.						

Selected Manufacturers of Portable Air Conditioners

Company Address Telephone No.	Model No.	Maximum Cooling Capacity	Energy Efficiency Rating	Dehumidifying Output (pints/day)	Weight Indoor Unit	Dimensions (wxdxh, inches) Indoor Unit
MAYTAG **240 Edwards St.** **Cleveland, TN 37311** **(866) 629-8241** **www.maytag.com**	M6P09S2A	9,000 Btuh	7.9	42 pints	79	13.7x20.6x35.2
	M6P09D2A			91 pints	86	19.2x15.5x33.5
	MEP09D2A			91 pints	86	19.2x15.5x33.5
Features - Units have electronic controls with a full-featured hand-held remote control. You can adjust the temperature in 1-degree increments. 24-hour timer allows you to program the unit to meet your specific needs. The electronic controls are on top of the unit so they are easy to see. Ther are three cooling modes, three fan speed modes and one dehumidifying mode. It is an evaporative unit so the water mist is vented outdoors, (does n have a water container to empty). The washable air filter slides out for easy cleaning and it also has a charcoal filter. Side hand-holds and botto casters allow for easy portability. An This unit is designed to cool area. Model MEP09D2A includes a 4,500 Btuh heater.						
NORTHSTAR IND. **PO Box 25610** **Honolulu, HI 96825** **(800) 326-1365** **(808) 423-1365** **www.freecomac.com**	Freecom RCS-M1000T	4,000 Btuh	9.8	36.5 pints	36 lbs	10.6x14.6x25.8
	Freecom RCS-M2000T	8,000 Btuh	10.0	61 pints	62 lbs	12.8x16.1x30.5
	Freecom RCS-M2000TR	8,000 Btuh	10.0			
	Freecom RCS-S3000T	12,500 Btuh	11.4	64 pints	75 lbs	18.5x13.2x27.4
Features - The Freecom 4000 Btuh model has an adjustable 1 to 3 hour delay off timer. The fan control is high, low, modulating or dehumidify on (135/106/80 cfm). This unit is recommended for areas approximately 100 to 120 sq. ft. The Freecom 8000 Btuh has a 6-stage thermostat that adjustable from 64 to 82 degrees Farenheit. The control panel is electronic and has a single speed fan only mode (no cooling) and three-speed blow cooling modes — high, medium or low (200/185/174 cfm). The 9-hour automatic shut-off timer can be set in one hour increments. The unit comes with window/ceiling panel kit. It can be installed in either a horizontal or vertical position and can be adapted to fit a standard 24" drop ceiling grid. An option condensate pump kit is available that allows the water to be pumped to a drain so there is no need to empty the tank. A wall vent kit is available so th unit can be vented through a wall. The vent kit is similar to a dryer vent kit with a 4" duct and louver assembly. There are automatic oscillating fro louvers to distribute the cool air evenly. It is recommended for a cooling area of approximately 200 to 400 square feet. These units have an automat shut-off that turns the unit off when the water tank reaches its capacity. There is also a blinking indicator light as well as an audio warning to alert you this condition. They come with a 40" flexible exhaust air duct kit. The units are equipped with an air filter that can be removed for cleaning. Th Freecom 12,500 Btuh is a split air conditioner with both an indoor and an outdoor unit. The outdoor condensing unit dimensions are 20" w x 9.1" d x 19 h and weighs 26.4 lbs. The outdoor unit includes all mounting hardware. The cooling area is approximately 300 to 600 square feet. It is equipped with full-feature remote control. The control panel has pushbutton controls with an LED display.						
SOLEUS INT'L. **9415 Montgomery Rd.** **Ste. P** **Cincinnati, OH 45242** **(513) 985-1211** **www.soleusair.com**	KY-32E	12,000 Btuh	8.7	95 pints	99 lbs	17x13x34
	MAC-10K	10,000 Btuh	10.2	50 pints	80 lbs	17.75x19.25x32.5
	MAC-12K	12,000 Btuh	8.9	60 pints	82 lbs	17.75x19.25x32.5
	MAC-8000	8,000 Btuh	9.4	75 pints	65 lbs	16.12X12.75X31.5
	LX-120	12,000 Btuh	8.9	60 pints	82 lbs	17.75x19.25x32.5
	LX-140	14,000 Btuh	8.7	65 pints	79 lbs	17.75x19.25x32.5
Features - The KY-32E is a multifunctional unit that can operate as an air conditioner, dehumidifier, air cleaner, heater, and fan. A remote control wit LCD display gives you complete control over the unit. The high performance dehumidifier can extract one tank's worth every 2 to 6 hours in extreme humid conditions. When the water bucket fills, an overflow alarm sounds and a back-up system suspends dehumidification. Three fan speeds enhanc cooling performance, maximize energy efficiency and improve air circulation. The adjustable thermostat, with a range of 61 to 86 degrees, lets you sele your own personal comfort level. The MAC-12K includes a venting kit with two 6-foot hoses, which prevents hot air from recirculating into the coolin room. A 24-hour programmable clock timer needs to be programmed only once. The system remembers start/stop time and temperature. The syste will even remember exact settings if power is interrupted. The unit includes a 60-pint dehumidifier. For extremely humid conditions, there is a emergency holding tank with a drainage port on the back to prevent potential water damage. The LX-140 is also an efficient heat pump for heating.						
SUNPENTOWN **21415 Baker Pky.** **City of Industry, CA 91789** **(800) 330-0388** **www.sunpentown.com**	WA-7500M	7,500 Btuh	12.1	46 pints	60 lbs	16x16x30 in.
	WA-9040D Series	9,000 Btuh	9.2	47 pints	82 lbs	18x18.5x33.5 in.
	WA-1010 Series	10,000 Btuh	9.1	76 pints	73 lbs	12.8x18.1x33.1 in.
	WA-1230 Series	12,000 Btuh	12.6	65 pints	70 lbs	15.7x15.5x30.5 in.
Features - These are designs which use an evaporative technology. The condensate created as the the room air is cooled and dehumidified, is spraye onto the condenser coils to improve efficiency. About 75% of the water is evaporated and blows out the window duct. This also reduces the amount water which goes into the tank so you have to empty it less often. There is an expandable five-foot long vent hose (attaches to the window adapter) ar an optional hose to continuously drain the water tank. All of the models have two-speed fans and adjustable directional louvers. They also have washab air filters and the model WA-1210L has an ultraviolet light ray filter which kills germs passing through the unit. All the models include a programmab eight-hour timer or continuous operation, both of which are thermostatically controlled. Models WA-1010 and WA-1210 can be purchased with or witho a hand-held remote control. Also, both of these models available in a heat pump version for efficient heating during winter. The heating outputs (Btu are the same as their cooling outputs. The WA-1210 series is large enough to cool a room up to 400 square feet. The WA-9040 series offers option two-hose design to improve efficiency.						

Selected Manufacturers of Portable Air Conditioners

Company Address Telephone No.	Model No.	Maximum Cooling Capacity	Energy Efficiency Rating	Dehumidifying Output (pints/day)	Weight Indoor Unit	Dimensions (wxdxh, inches) Indoor Unit
TOYOTOMI USA 604 Federal Rd. Brookfield, CT 06804 (203) 775-1909 www.toyotomiusa.com	TAD-30F	12,000 Btuh	10.1	111 pints	84 lbs	20x16.5x36
Features - The units have motorized louvers that oscillate back and forth through a 90° arc to distribute the air. The louvers can be locked in a fixed position upward or downward to direct airflow to areas of the room that most need it. It has an automatic one to six hour timer and can be set for the cooling mode or just the fan mode with a three-speed blower. The cooling modes are high, low and intermittent. Intermittent is when the blower automatically repeats "ON" for 8 seconds and "OFF" for 2 seconds. Once you set your desired programming, it will remain in memory until the unit is disconnected from the wall outlet. When the drain water tank is full it will automatically shut the unit off and a warning light alerts you that the tank is full. There is a reusable air filter that can be removed for cleaning. An optional charcoal mesh filter is available to eliminate room odors Other optional accessories include a window panel kit for extra wide windows, a 10 foot long extension duct hose and a ceiling panel kit. The TID-1800HP model has a built-in heater with a heating capacity of 8,000 Btuh.						
WINDCHASER 4130 Del Ray Ave. Marina Del Ray,CA 90292 (800) 405-2943 windchaserproducts.com	PACR1000	10,000 Btuh	8.7	50.6 pints	63 lbs	18.7x14.1x33.1
	PACR9	9,000 Btuh	10.0	82 pints	66 lbs	18.1x12.6x30.7
	PACR10	10,000 Btuh	10.0	51 pints	64 lbs	15.2x14.8x29.5
	PACR12	12,000 Btuh	10.9	84 pints	82 lbs	18x18x33
Features - These units include a full-feature remote control. An adjustable thermostat automatically maintains desired temperature by turning the compressor on and off. There is a special two-motor design. One motor delivers cool air and the other motor cools the compressor and condenser for efficiency and less noise. The evaporative hot air vent system eliminates the need for a water tank. They have a bedtime function which gradually raises the temperature setting as you sleep to save electricity. Condensation is easily drained continuously through 1 of 2 thin rubber drain hoses. One hose runs through the exhaust hose and will drain the condensate utilizing a built in pump. The hose may run vertically up to a maximum of 5.9 feet above the ground. Alternatively, the other drain hose, located at the bottom rear of the unit, may be used to drain the condensate via gravity.						

Super-Efficient Whole-House Dehumidifier

THERMA-STOR PRODUCTS, PO Box 8050, Madison, WI 53708 - (800) 533-7533 (608) 222-5301 www.thermastor.com

model - "Santa Fe" dehumidifying capacity - 100 pints/day weight - 110 lbs.
size - 36" h x 20" w x 17" d wattage - 780 watts air flow - 250 cfm
general description - This is a whole-house stand-alone dehumidifier which uses a heat exchanger coil to pre-cool the air for more dehumidification. This coil increases the efficiency to 6.8 lbs. of water vapor removed per kwh of electricity used from only 2 lbs. per kwh for a typical dehumidifier. Helps eliminate mold, mildew and dust mites from your home. Rolls on casters.

9,000 Btuh Series by Fedder

- Quiet operation
- No permanent installation required
- 3 cool and 3 fan speeds plus dehumidify mode
- Easy access top-mounted controls (see diagram below)
- Electronic touch control with full featured remote control
- 1 degree temperature adjust
- Actual or Set temperature display
- 24-hour timer
- Slide-out filter for easy cleaning
- Side hand-holds and bottom casters
- Includes adjustable window adapter and flexible vent hose
- No water bucket to empty

Model LX-140 by Soleus

- Uses efficient two-hose design (inlet and outlet ducts to window adapter or can be operated as a single-hose unit.
- Air conditioner: 14,000 Btuh cooling capacity
- Heat pump heating capacity is 11,000 Btuh.
- Dehumidifier: 65 U.S. pint per 24 hours

- Fan: 3 fan speeds (High - Med - Low)
- Uses an evaporative system so the moisture is exhausted with the air going outdoors.
- Energy efficient dual motor design - one motor delivers cool air while the other motor cools the compressor and condenser.
- 3-speed fan with oscillation recessed louvers prevent damage to the unit.
- has remote control with color-coded display for easy operation.

RCS-S3000T Split by Northstar

- 12,500 Btuh cooling capacity
- Remote control with complete operation functions
- Special light weight remote condenser fan coil unit with evaporative slinger design
- Heavy duty 10 to 15 foot pre-charged line set with patented quick disconnect system
- Compact size with easy to maneuver castor wheels
- Advanced solid state circuitry with manual soft touch controls

- Attractive, light weight, rustproof durable molded condenser cabinet for outdoor use
- Extended warranty. Five year part warranty on the compressor with limited one year parts and labor on the entire air conditioner
- Minimal installation. Plug indoor unit into standard household outlet and place outdoor unit outside. Turn on indoor unit and adjust settings